

Integrated Control Systems, FMEA for Networks

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Abstract

Introduction Integrated Control Systems today are based on network technology. Local Area Networks (LAN) are used to collect data from the ship equipment into control processors, interconnect control processors and to link the control processors to operator stations or other equipment. The same approach is used for connections to the surrounding administrative systems.

This presentation focuses on Ethernet as medium for the network communication between control processors and between control processors and operator stations. Motivated by reported DP incidents with relation to networks, the presentation shows how FMEA procedures can be used to analyse a dual network system and highlight the important issues of reliability by:

- Identifying potential failures.
- Analysing effects regarding safe process states and safe operator control/communication.
- Summarising current requirements from Class certification societies.

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